

FIG. 1

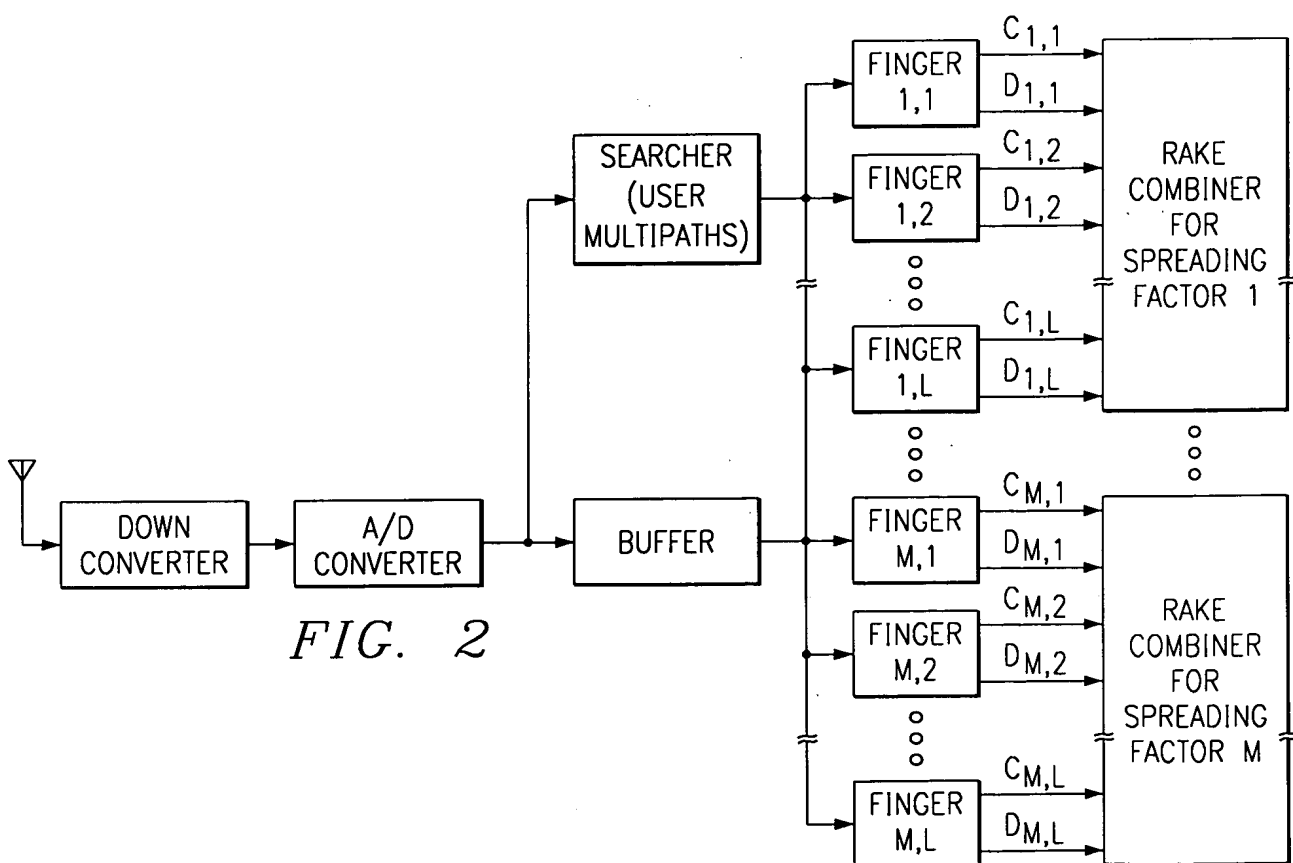
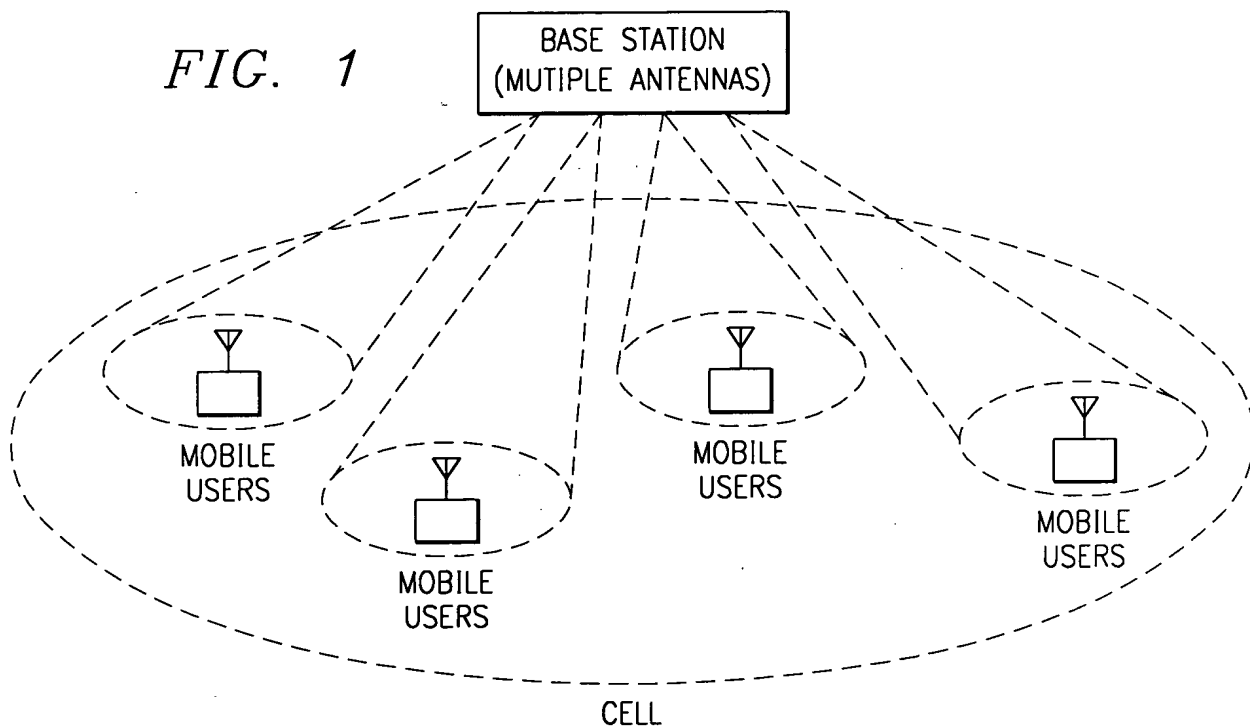


FIG. 2

FIG. 3

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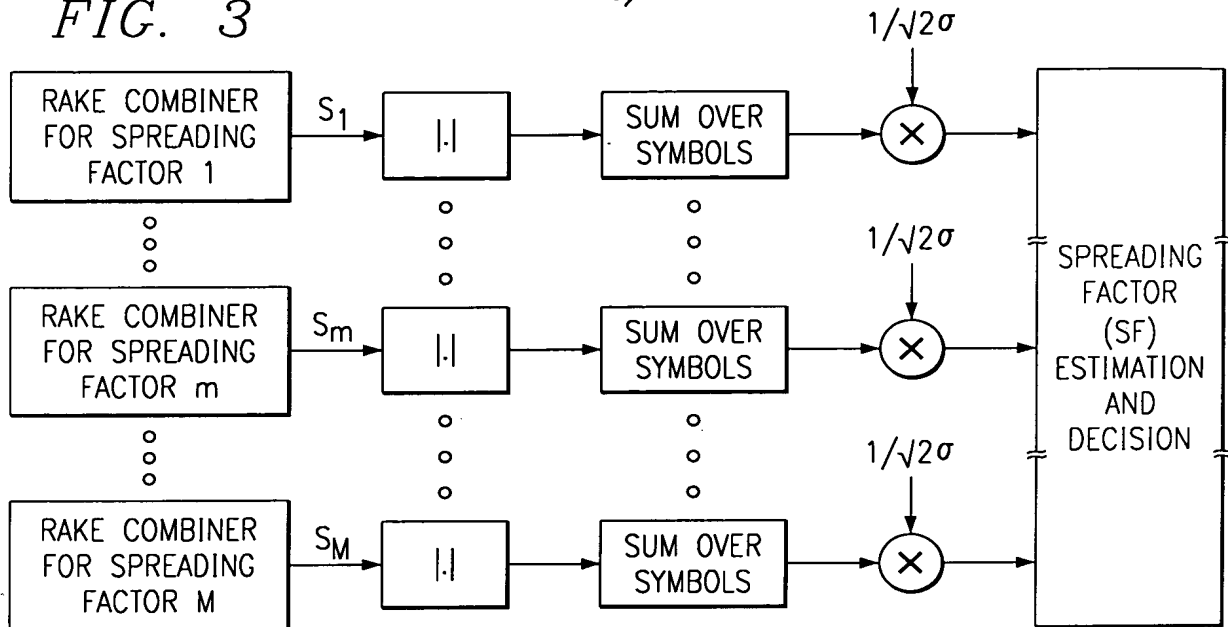


FIG. 4.1

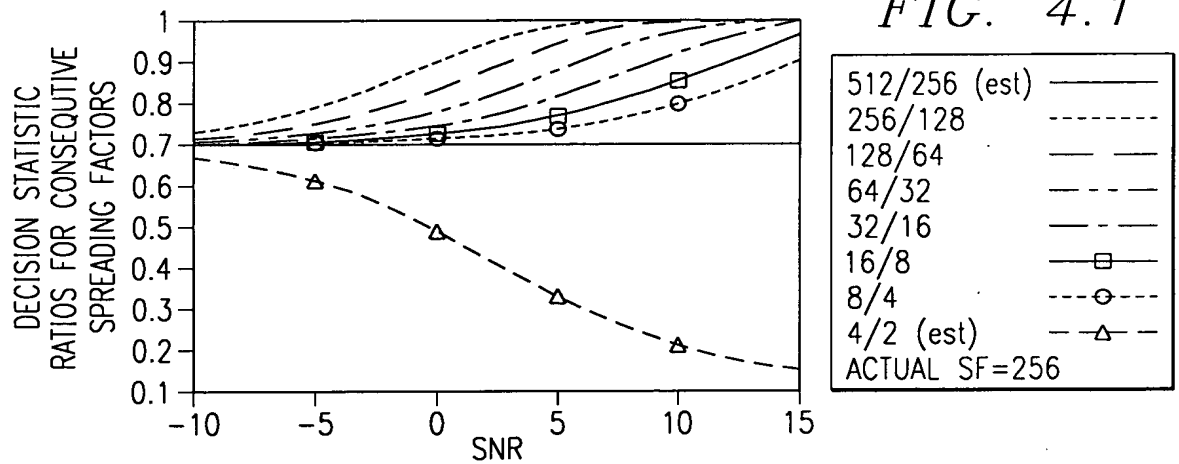
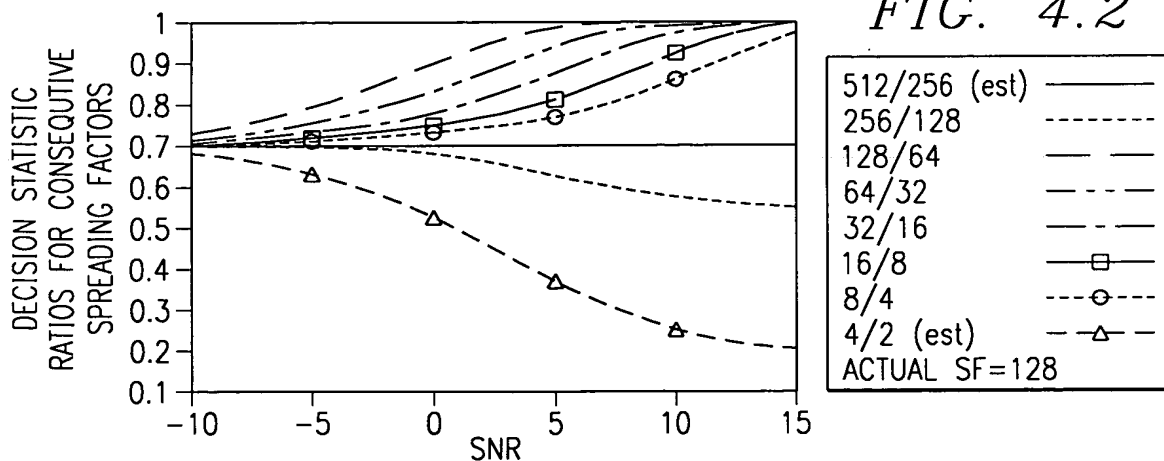


FIG. 4.2



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FIG. 4.3

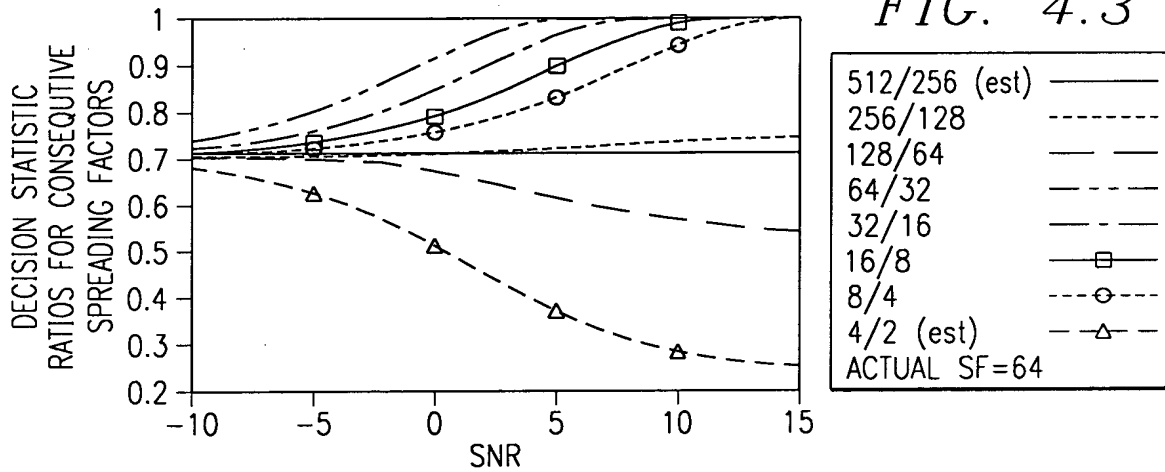


FIG. 4.4

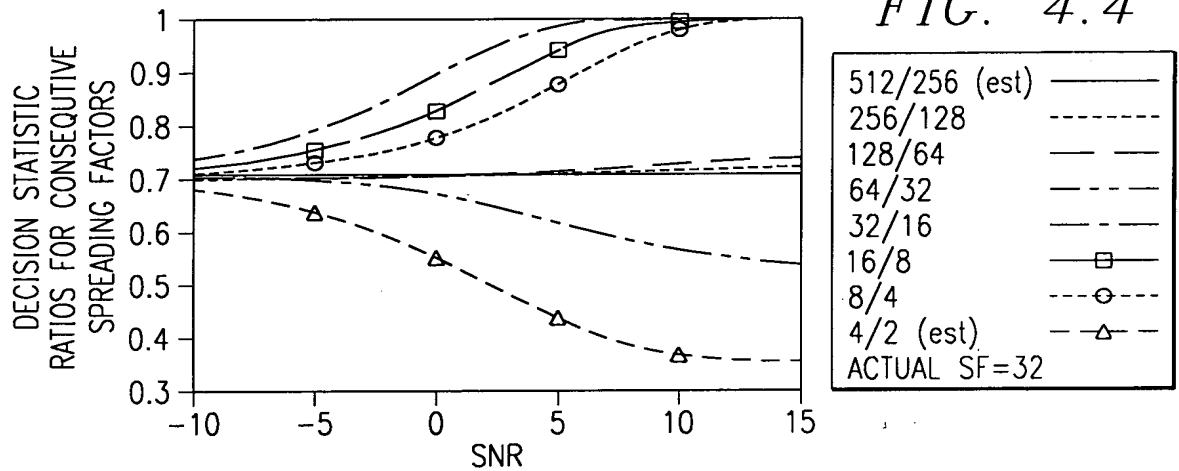
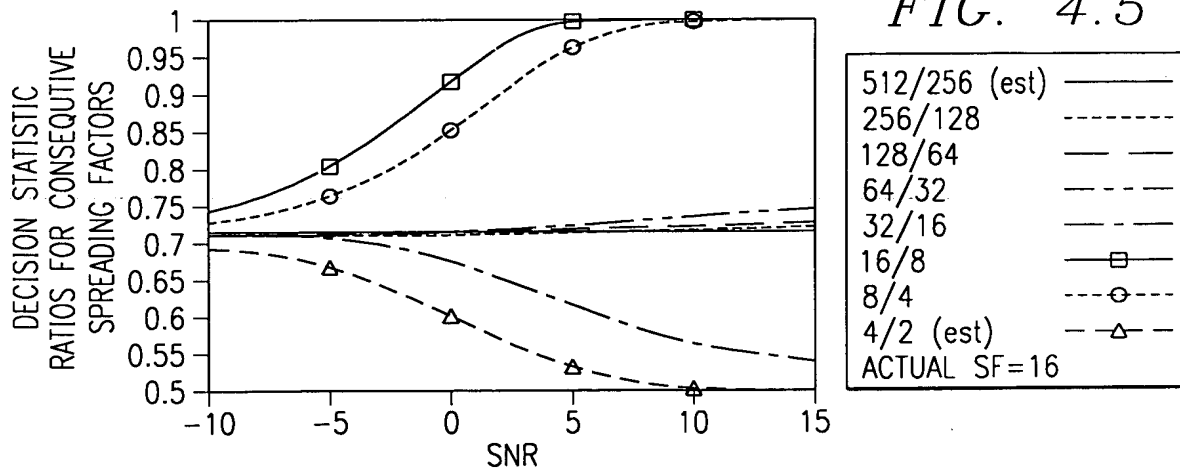


FIG. 4.5



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Figure 4.6 is a line graph titled "DECISION STATISTIC RATIOS FOR CONSECUTIVE SPREADING FACTORS" on the y-axis and "SNR" on the x-axis. The y-axis ranges from 0.5 to 1.0 with increments of 0.05. The x-axis ranges from -10 to 15 with increments of 5. The graph shows several curves representing different spreading factor ratios. A horizontal line at y ≈ 0.71 is labeled "ACTUAL SF=8". The curves for ratios 512/256 (est), 256/128, 128/64, 64/32, 32/16, and 4/2 (est) are clustered around the actual SF=8 line. The curve for 16/8 starts at y ≈ 0.71 at SNR = -10 and decreases to y ≈ 0.54 at SNR = 15. The curve for 8/4 starts at y ≈ 0.74 at SNR = -10 and increases to y ≈ 1.0 at SNR = 10, then slightly decreases. The curve for 512/256 (est) starts at y ≈ 0.71 at SNR = -10 and increases to y ≈ 1.0 at SNR = 10, then slightly decreases.

SNR	512/256 (est)	256/128	128/64	64/32	32/16	16/8	8/4	4/2 (est)	Actual SF=8
-10	0.71	0.71	0.71	0.71	0.71	0.71	0.74	0.71	0.71
-5	0.71	0.71	0.71	0.71	0.71	0.70	0.80	0.71	0.71
0	0.71	0.71	0.71	0.71	0.71	0.68	0.90	0.71	0.71
5	0.71	0.71	0.71	0.71	0.71	0.62	0.98	0.71	0.71
10	0.71	0.71	0.71	0.71	0.71	0.57	1.00	0.71	0.71
15	0.71	0.71	0.71	0.71	0.71	0.54	0.98	0.71	0.71

Figure 4.7 is a line graph titled "DECISION STATISTIC RATIOS FOR CONSECUTIVE SPREADING FACTORS" on the y-axis and "SNR" on the x-axis. The y-axis ranges from 0.5 to 1.0 with increments of 0.05. The x-axis ranges from -10 to 15 with increments of 5. The graph displays several curves representing different spreading factor ratios. The legend on the right indicates the following series:

- 512/256 (est): solid line
- 256/128: dashed line
- 128/64: solid line
- 64/32: dashed line
- 32/16: solid line
- 16/8: solid line with square markers
- 8/4: dashed line with circle markers
- 4/2 (est): dashed line with triangle markers
- ACTUAL SF=4: solid line

The 4/2 (est) curve (dashed line with triangles) shows the highest performance, increasing from approximately 0.75 at SNR=-10 to nearly 1.0 at SNR=10. The 16/8 curve (solid line with squares) shows a slight increase from 0.7 to 0.75. The 8/4 curve (dashed line with circles) shows a decrease from 0.7 to approximately 0.55. The other curves are clustered around 0.7.

Figure 5.1 is a line graph showing the difference of decision statistic ratios for consecutive spreading factors (SF) versus SNR. The y-axis is labeled "DIFFERENCE OF DECISION STATISTIC RATIOS FOR CONSECUTIVE SPREADING FACTORS" and ranges from -0.8 to 0.6. The x-axis is labeled "SNR" and ranges from -10 to 15. The graph displays several curves for different SF ratios, as indicated by the legend on the right:

- 256/128 (dashed line)
- 128/64 (solid line)
- 64/32 (dashed line)
- 32/16 (solid line)
- 16/8 (solid line with square markers)
- 8/4 (dashed line with circle markers)
- 4/2 (est) (dashed line with triangle markers)

The legend also notes "ACTUAL SF=256". The curves for 256/128, 128/64, 64/32, 32/16, and 16/8 are relatively flat, showing small positive differences. The curve for 8/4 shows a slight negative slope. The curve for 4/2 (est) shows a significant negative slope, starting near 0 at SNR = -10 and decreasing to approximately -0.75 at SNR = 15.

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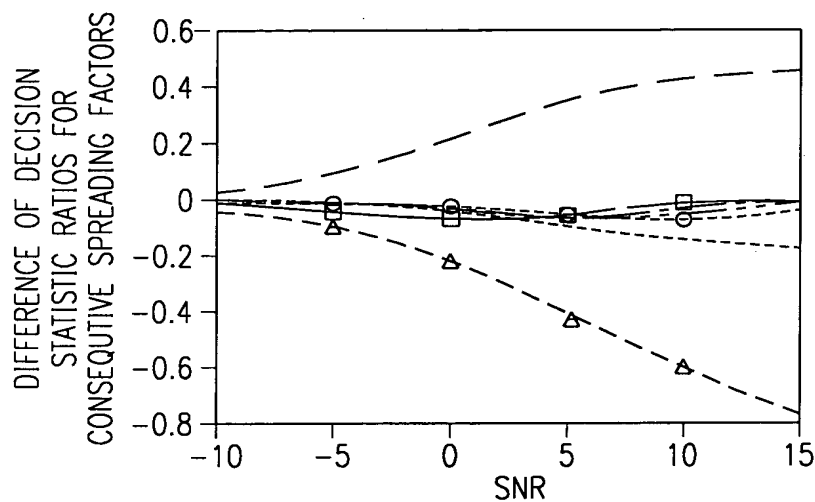


FIG. 5.2

256/128	-----
128/64	————
64/32	-----
32/16	————
16/8	——□——
8/4	——○——
4/2 (est)	——△——
ACTUAL SF=128	

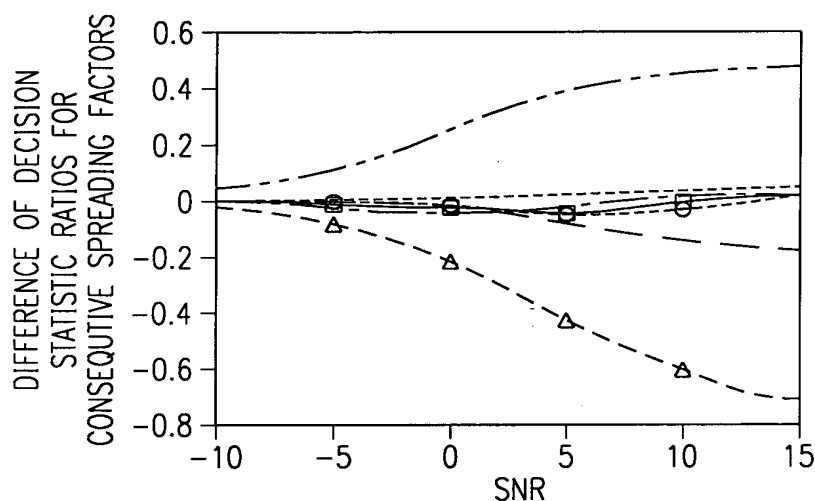


FIG. 5.3

256/128	-----
128/64	————
64/32	-----
32/16	————
16/8	——□——
8/4	——○——
4/2 (est)	——△——
ACTUAL SF=64	

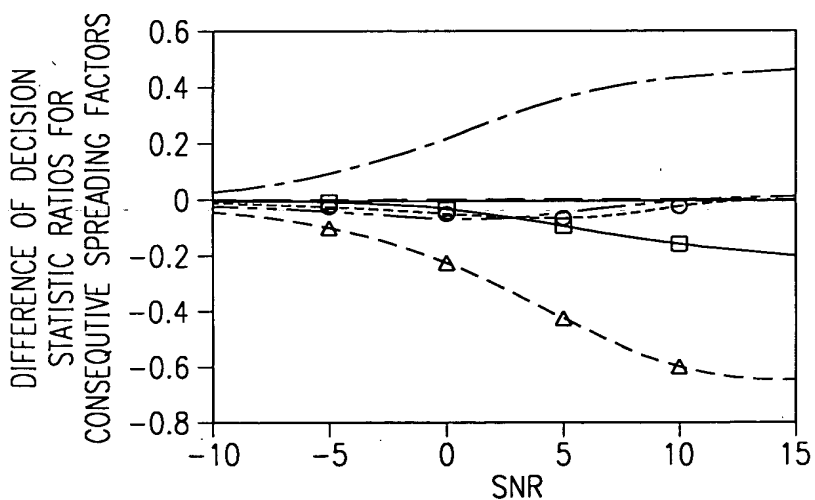
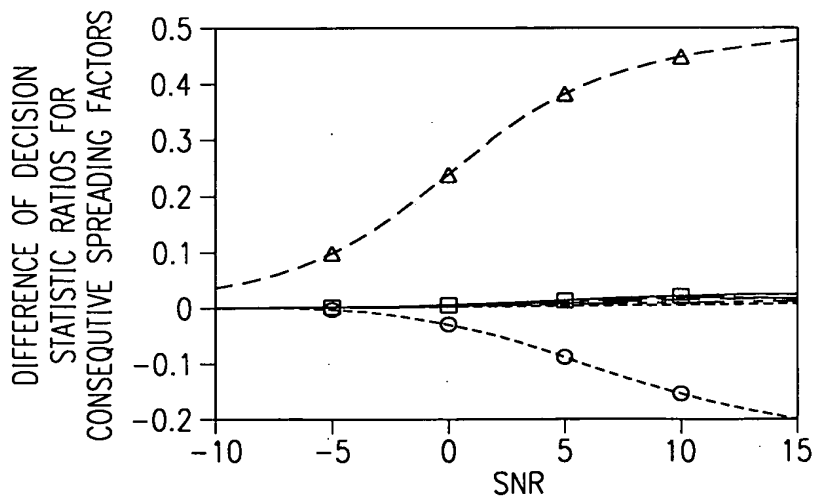
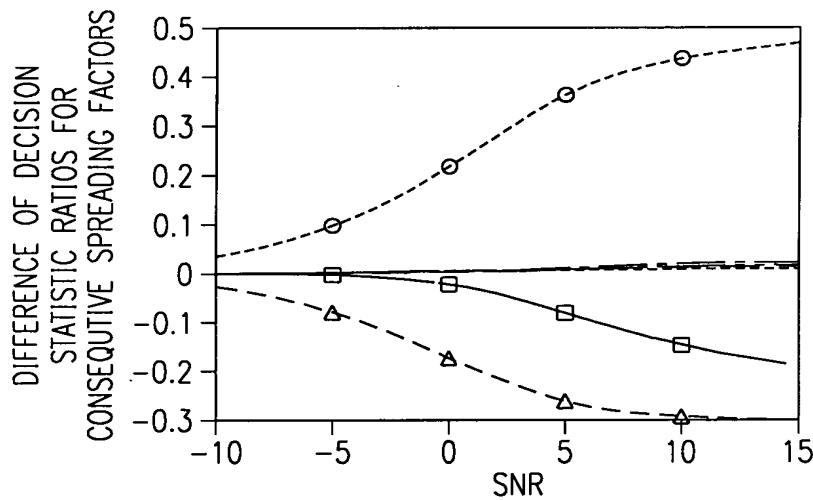
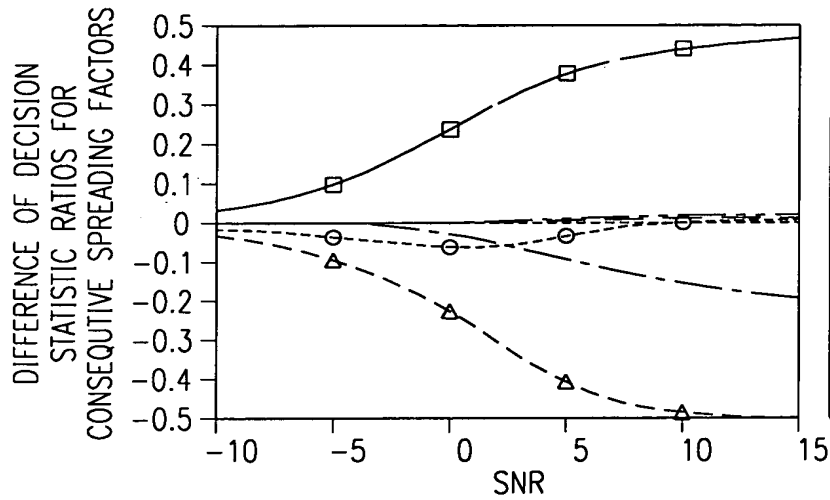


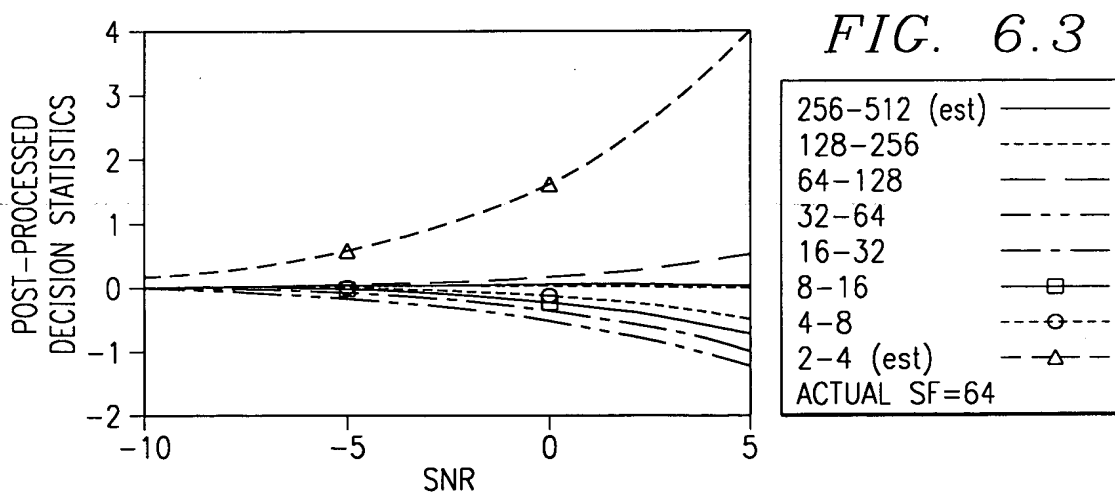
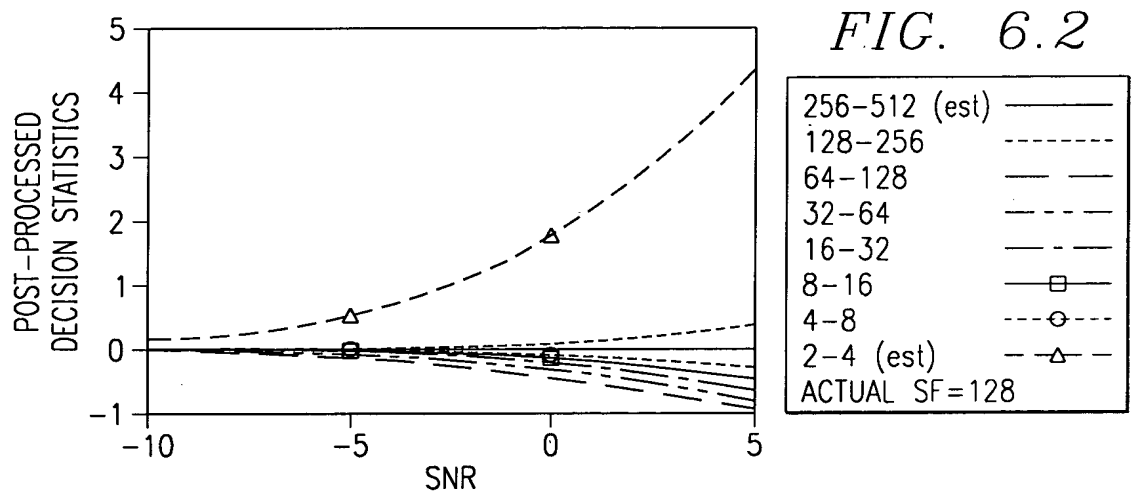
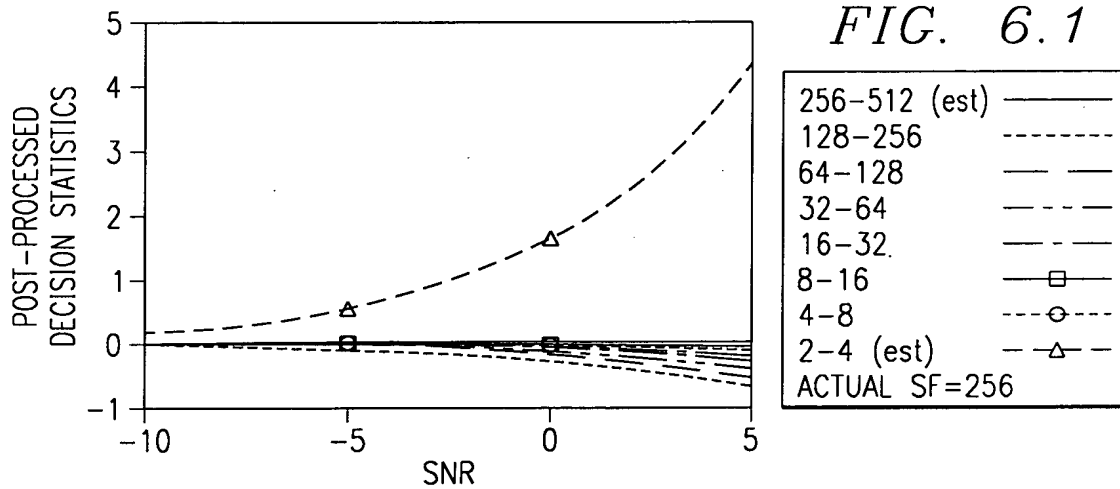
FIG. 5.4

256/128	-----
128/64	————
64/32	-----
32/16	————
16/8	——□——
8/4	——○——
4/2 (est)	——△——
ACTUAL SF=32	

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FIG. 6.4

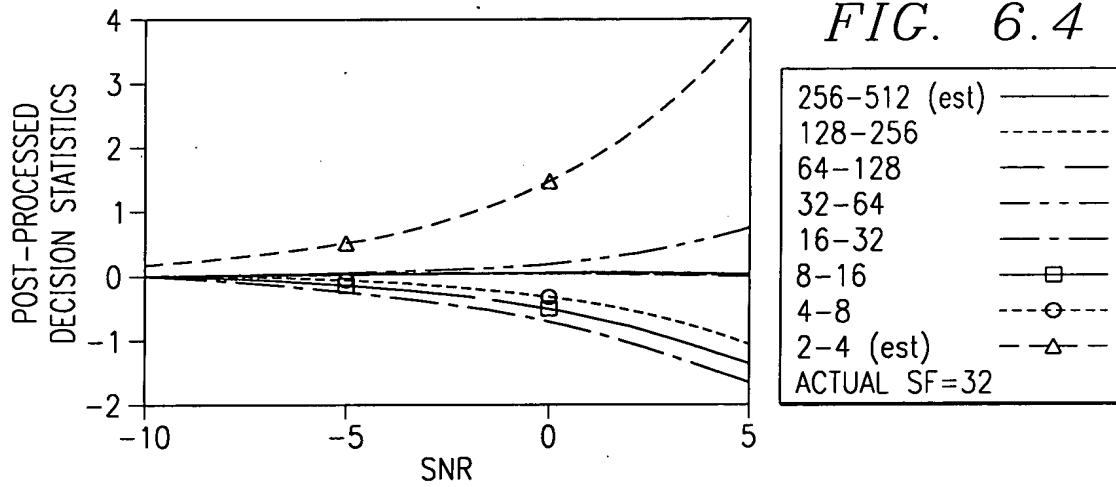


FIG. 6.5

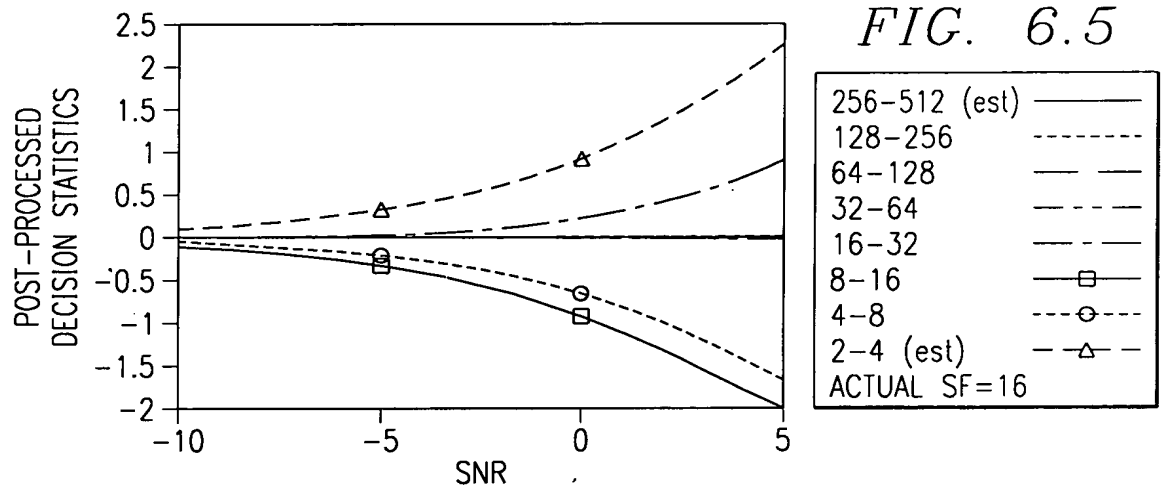
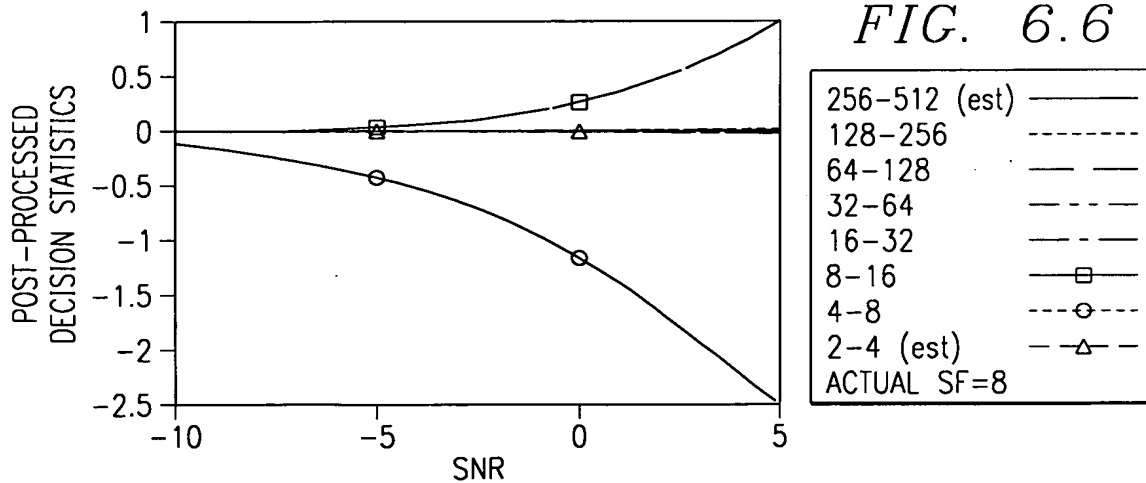
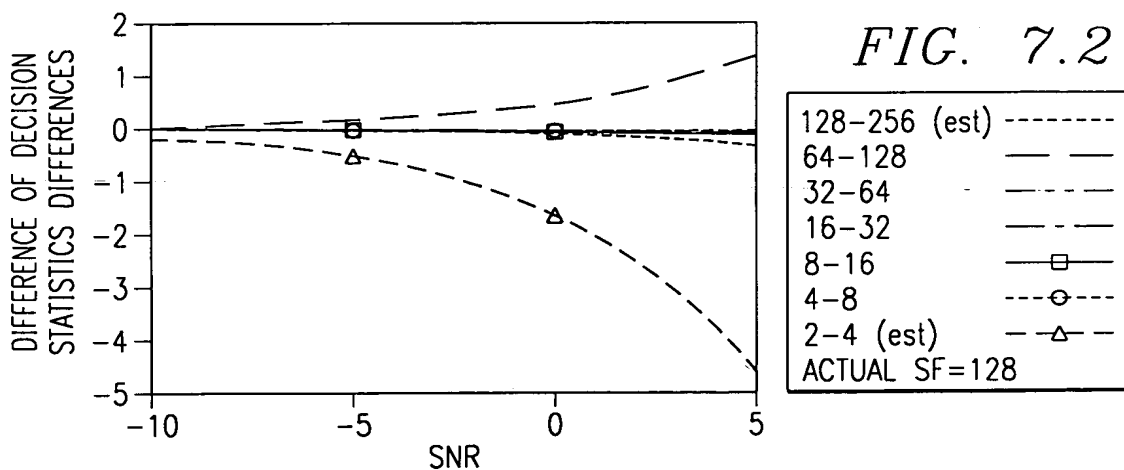
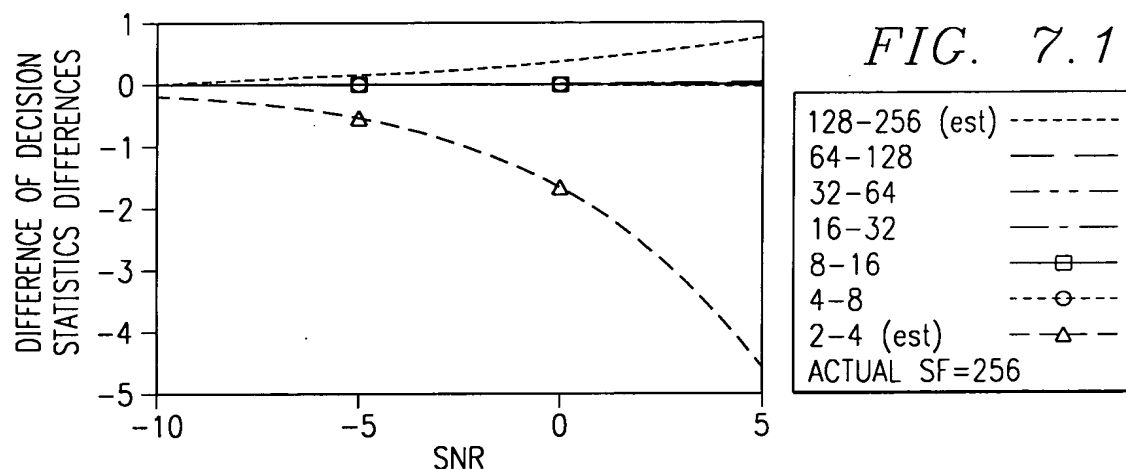
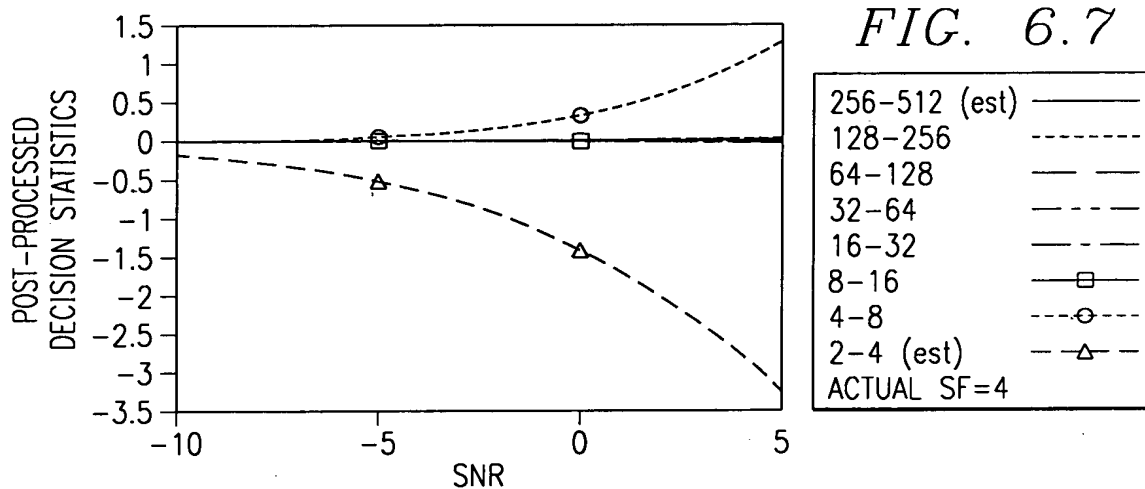


FIG. 6.6

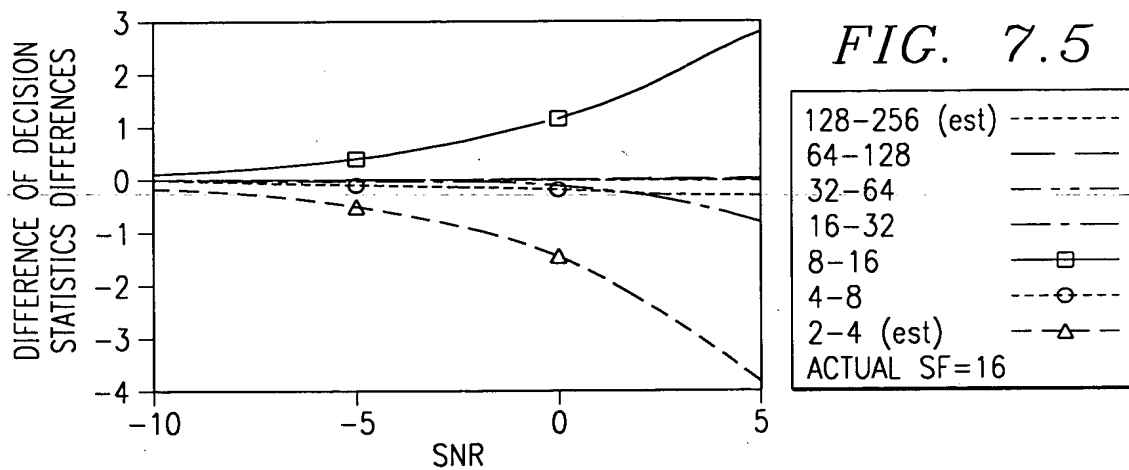
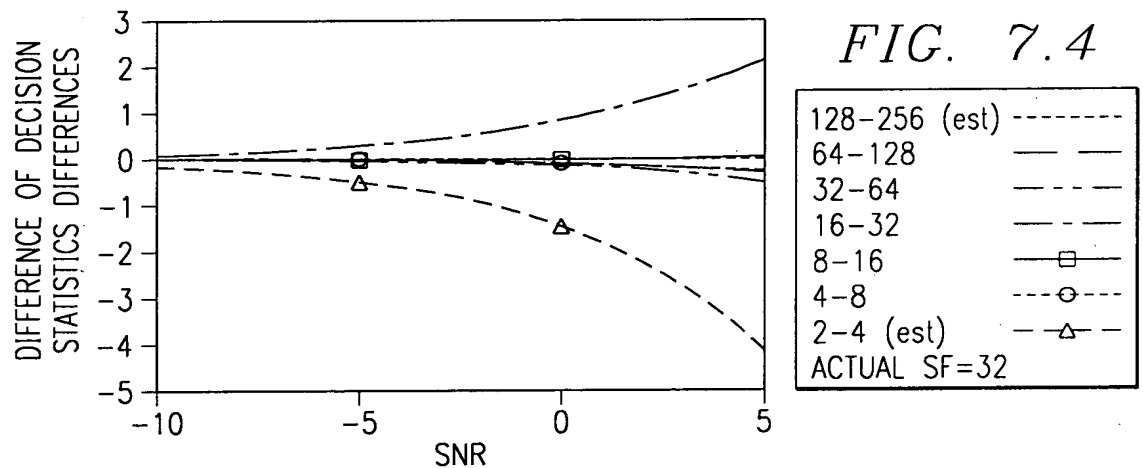
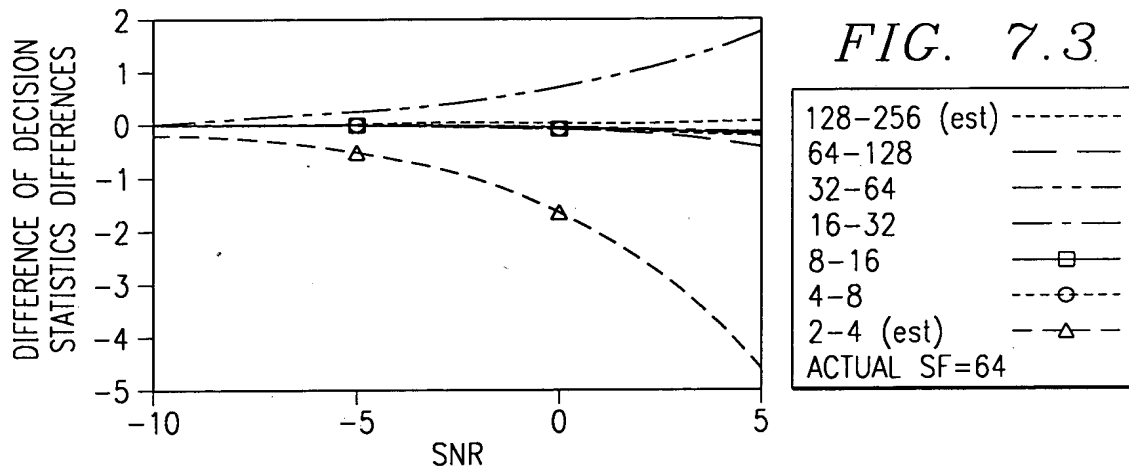




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